

CLAIMS

What is claimed is:

1. A feeding roller shaft supporter for an ink-jet printer having a feeding roller shaft, comprising:
 - a main chassis which forms a frame of an ink-jet printer;
 - a first supporting unit in the main chassis supporting opposite ends of the feeding roller shaft;
 - a driving member provided at a first end of the feeding roller shaft;
 - an axial position correction unit mounted on the feeding roller shaft close to the driving member, correcting an axial position of the feeding roller shaft; and
 - a second supporting unit supporting the feeding roller shaft, wherein the second supporting unit is provided on a second end of the feeding roller shaft, preventing the shaking of the feeding roller shaft caused by thrust when the feeding roller shaft rotates.
2. The feeding roller shaft supporter according to claim 1, wherein the first supporting unit comprises first and a second bushings, the first and second bushings respectively located at opposite ends of the feeding roller shaft.
3. The feeding roller shaft supporter according to claim 2, wherein a predetermined interval is formed between the driving member and the first supporting unit at the first end of the feeding roller shaft, so that the driving member does not come into contact with the first supporting unit.
4. The feeding roller shaft supporter according to claim 1, wherein a predetermined interval is formed between the driving member and the first supporting unit at the first end of the feeding roller shaft, so that the driving member does not come into contact with the first supporting unit.
5. The feeding roller shaft supporter according to claim 1, wherein the second supporting unit comprises an anchoring ring and a washer centered about the feeding roller shaft.

6. The feeding roller shaft supporter according to claim 5, wherein the second supporting unit is provided to be in face-contact with a surface of the first supporting unit facing the first end of the feeding roller shaft.

7. The feeding roller shaft according to claim 1, wherein the second supporting unit comprises a cap provided distally from the second end of the feeding roller shaft, and the cap is in point-contact with a fixed body inside the main chassis.

8. The feeding roller shaft supporter according to claim 7, wherein a predetermined interval is formed between the driving member and the first supporting unit at the first end of the feeding roller shaft, so that the driving member does not come into contact with the first supporting unit.

9. The feeding roller shaft according to claim 7, wherein the cap is inserted into the second end of the feeding roller shaft.

10. The feeding roller shaft according to claim 7, wherein the cap has a rounded external surface.

11. The feeding roller shaft according to claim 7, wherein the fixed body inside the main chassis is a maintenance station.

12. The feeding roller shaft according to claim 1, wherein the second supporting unit comprises:

- a cap provided at the second end of the feeding roller shaft; and

- a cap supporting member, the cap being in point-contact with the cap supporting member,

- wherein the cap supporting member is assembled to the main chassis or a fixed body inside the main chassis in a screw connection manner so that an extension of the cap supporting member is adjustable.

13. The feeding roller shaft supporter according to claim 12, wherein a predetermined interval is formed between the driving member and the first supporting unit at the first end of the feeding roller shaft, so that the driving member does not come into contact with the first supporting unit.

14. The feeding roller shaft according to claim 12, wherein the cap is provided with a rounded external surface, and the rounded external surface is in point-contact with a flat surface of the cap supporting member.

15. The feeding roller shaft according to claim 12, wherein the cap supporting member is provided with a rounded external surface, and the rounded external surface is in point-contact with the cap.

16. A method of supporting a feeding roller shaft for an ink-jet printer to reduce shaking of the shaft occurring with the rotation of the feeding roller shaft, the method comprising:

providing a first supporting unit, in a main chassis of the printer, supporting opposite ends of the feeding roller shaft in a radial direction;

providing an axial position correction unit on a first end of the feeding roller shaft, close to a driving member; and

providing a second supporting unit on a second end of the feeding roller shaft, supporting the feeding roller shaft in an axial direction.

17. The method of claim 16, further comprising forming a predetermined interval between the driving member and the first supporting unit at the first end of the feeding roller shaft, so that the driving member does not come into contact with the first supporting unit.

18. The method of claim 16, wherein the providing a second supporting unit comprises providing an anchoring ring and a washer to be in contact with the first supporting unit.

19. The method of claim 16, wherein the providing a second supporting unit comprises providing a cap to be in contact with a fixed body inside the main chassis.

20. The method of claim 16, wherein the providing a second supporting unit comprises: providing a cap on the second end of the feeding roller shaft; and

providing a cap supporting member to be in point contact with the cap;
wherein the cap supporting member is assembled to the main chassis or a fixed body inside the main chassis in a screw connection manner so that an extension of the cap supporting member is adjustable.

21. A feeding roller shaft supporter for an ink-jet printer having a feeding roller shaft, comprising:

- a first supporting unit supporting opposite ends of the feeding roller shaft in a radial direction;
- a driving member provided at a first end of the feeding roller shaft; and
- a second supporting unit provided on a second end of the feeding roller shaft, supporting the feeding roller shaft in an axial direction, so that axial shaking of the feeding roller shaft is reduced.

22. The feeding roller shaft supporter of claim 21, wherein the second supporting unit is provided to be in point-contact with the first supporting unit or a fixed body in the printer, so that friction affecting a rotational force of the feeding roller shaft by the contact is reduced.

23. The feeding roller shaft supporter of claim 21, further comprising a predetermined interval between the driving member and the first supporting unit at the first end of the feeding roller shaft.

24. A feeding roller shaft supporter for an ink-jet printer having a feeding roller shaft, comprising:

- a first supporting unit supporting opposite ends of the feeding roller shaft;
- a driving member provided at a first end of the feeding roller shaft; and
- a predetermined interval between the driving member and the first supporting unit at the first end of the feeding roller shaft, the predetermined interval preventing the feeding roller shaft from being shaken due to deviation in the driving member.